

GENERAL INFORMATION

June 1953

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# SOIL CONSERVATION

OFFICIAL ORGAN OF THE SOIL CONSERVATION SERVICE

# SOIL CONSERVATION•

EZRA TAFT BENSON  
SECRETARY OF AGRICULTURE

ROBERT M. SALTER  
CHIEF, SOIL CONSERVATION SERVICE

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## ★ THIS MONTH ★

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WELLINGTON BRINK  
Editor

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BICOLOR EXPERIENCE.—Bicolor lespedeza is the No. 1 plant for quail in the South Carolina low country, says P. C. McClary, Jr., of Friendfield Plantation.

McClary started planting bicolor in 1946 as a part of his conservation program with the Georgetown Soil Conservation District. One-eighth acre patches were planted on well-drained areas in the woods and along the edges of fields. He now has 235 patches scattered over 2,500 acres.

In the past three seasons counts showed 67, 64, and 85 coveys of quail respectively. He estimated that during the past season 250 or more birds were killed on the property.

"We examined crows of birds killed and found only one last year that did not contain bicolor seed," McClary reports.

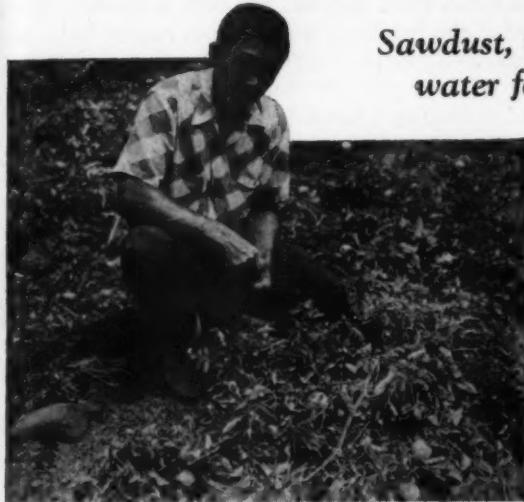


FRONT COVER.—Well surrounded by a cover crop strip of wheat, vetch and voluntary rye, is young Sidney Ripple, son of a conservation-minded Maryland tobacco farmer. John Ripple is in the Anne Arundel County Soil Conservation District. The photograph was made by Gordon Smith just about a year ago.

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# Wood-Waste Mulches in Hawaii

**Sawdust, woodchips, and bagasse cut the cost of water for growers of flowers and vegetables**



Shinichi Araki succeeds with mulching.

A FEW years ago it would have been a hard job to convince a farmer in the Territory of Hawaii that he ought to use organic mulches on his cropland. He had never thought much about sawdust, wood chips, and bagasse as farming materials.

The story is changing now. Thanks to the efforts of a few pioneering farmers, encouraged by Hawaii's soil conservation districts and the Soil Conservation Service, more and more Islanders are seeing the value of mulches in their soil and water conservation program.

One of our pioneers in the use of wood wastes is Takeshi Shibuya, a cooperator with the Olinda-Kula Soil Conservation District on the Island of Maui. This young farmer also is a florist in Wailuku, the largest town on the island. He depends entirely upon the products of his own farm to keep his shop well supplied with flowers. With the help of M. H. Arnold, Jr., SCS technician, he made the change-over to "protective cover" farming about a year ago.

Shibuya reports that the use of sawdust and wood chips has brought him savings up to 70 percent in the volume of water used, and similar reductions in time and labor required for irri-



Takeshi Shibuya displays a basket of gladiolas grown under a system of mulch farming.

gation and weeding. Moreover, he finds that mulching helps him to grow carnations, gladioli and other flowers of superior fragrance and beauty—an important item with florists everywhere and particularly in flower-loving Hawaii.

Shibuya's middle name is not "Persistence," but maybe it should be.

"I think enough of mulching as a good prac-

Note.—The author is soil conservationist, Soil Conservation Service, Wahiawa, Oahu, T. H.

tice," he says, "that I go every afternoon with my station wagon to get sawdust and other waste materials at a local planing mill. I fill a dozen or so pineapple sacks. Then, after work, I drive to the farm—a distance of 20 miles from Wailuku—and unload the sacks. If it isn't too dark, I spread some of the material on my flower beds. Next morning, bright and early, I drive to the farm again, finish spreading the mulch, and harvest flowers for the shop."

In the past year he has covered 7 acres with a 3-inch layer of wood wastes. That's a mighty big task when you consider that every load was hauled 20 miles in a station wagon. Recently he purchased another 7-acre farm, which he plans to anchor down with mulch as soon as possible.

An elderly couple who help him with his irrigation and weeding are watching these developments with some anxiety. "They aren't wholly in favor of my mulching project," he remarks. "They're afraid it will put them out of a job!"



Yukio Fukunaga, and calla lilies mulched with sawdust.

Shibuyu expected the wood wastes to sap his soil of nitrogen, and was prepared to apply extra amounts of nitrogenous fertilizers. Thus far, however, that has not been necessary. Perhaps the reason is that he does heavy fertilization as a routine part of his farming operations.

To show his neighbors and himself the value of mulching vegetable crops, Shibuyu planted cabbages and onions between his flower rows. The cabbages, crisp and succulent as lettuce, reached an enormous size. A few measured 18 inches in diameter. The onions grew lush and green.

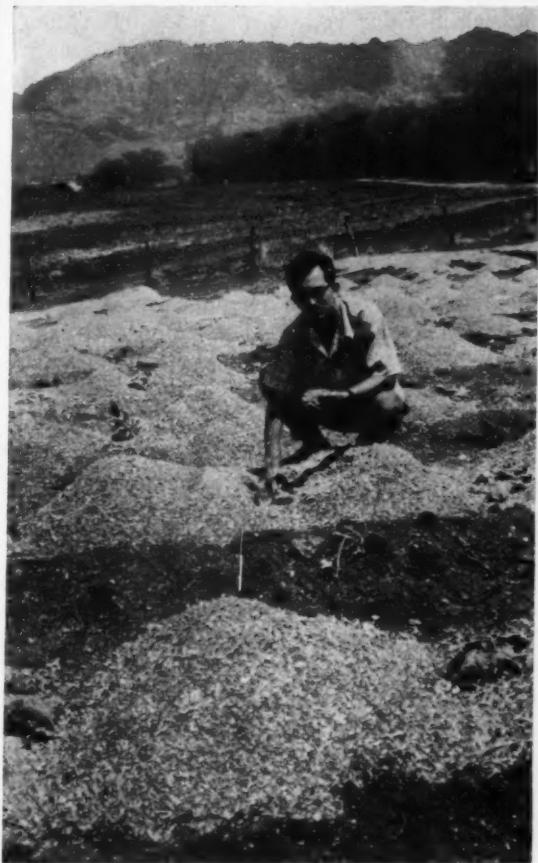
Mrs. Vera Weir, another Olinda-Kula District farmer, uses bagasse on strawberries, roses, and vegetables to cut her irrigation costs by one-half. Bagasse is sugar cane with the juices squeezed out. Mrs. Weir, an ex-Army nurse who went into farming 2 years ago, is convinced that mulching is an excellent practice. "Weed control is easier," she says, "yields are higher, and the money saved on my water bill more than covers the cost of buying bagasse and hauling it from the sugar mill. Besides these advantages, soil washing on my farm is a thing of the past."

A third district farmer, Yukio Fukunaga, finds that "A sawdust mulch on my calla lilies lengthens their blooming period by 2 months. My crop used to be finished by April or May. Now I can harvest clear into July."

George Raymond, chairman of the Olinda-Kula Soil Conservation District, sees in mulching a great conservation practice for Maui and the other islands of Hawaii. He thinks added impetus would be given to its use in Olinda-Kula if farmers were to band together to buy a wood-chipping machine. The district abounds in such weedy trees as black wattle, considered a pest by most farmers. Run through a chipper, these trees would make excellent mulching material, according to Raymond and Technician Arnold.

In the West Oahu Soil Conservation District, Shinichi Araki has pioneered in using mulch on vegetable land. Araki is a district director. He began using sawdust early in 1952, and was so encouraged by the results that he is extending the practice to all his fields.

The Araki farm is located in the hot, arid Waianae Valley of Oahu, where irrigation water runs 24 cents per thousand gallons. That's ex-



Richard Yonezaki of SCS examines piles of wood wastes to be spread as mulch on the Araki farm.

pensive water. Sawdust mulch on an acre of tomatoes saved Araki \$250 in water charges. Small wonder that this farmer is one of Oahu's top sawdust boosters!

Araki also noted that his tomato production showed a substantial increase, but he is cautious about giving all the credit to the mulch. "At the time I started using sawdust," he explains, "I also changed from a 10-12-10 to a 16-16-16 fertilizer. So, I'm not certain what my yields would have been without the mulch. I do know, however, that my tomatoes were of much better quality and were not damaged by insects."

His latest mulching venture involves a large field of broccoli. He uses a heavy application of poultry manure, followed by a 3-inch layer of sawdust. He obtains his sawdust from a mill in Honolulu.

## "Quail Roost Farm"

By BARRINGTON KING

ANY farmer can have quail on his farm, says Rice Gwynn, Jr., of Brunswick County, N. C.

Gwynn bought the first tract in his 5,000-acre "Quail Roost Farm" about 10 years ago. Since then a conservation plan worked out with the Lower Cape Fear Soil Conservation District not only has brought added income but also an increased quail population.

"Any farmer can fit good quail conditions into his farm layout," says this farmer. "My farm isn't run solely for quail, but the quail are there as a result of the kind of information given me by regional biologist Verne Davison and others of the Soil Conservation Service.

"The farm is strictly business, run to pay dividends. Its *gross income the year before I started conservation farming was \$10,000. That was increased to \$135,000 in 1952.*"

Good quail conditions are provided along the sides of the large fields by rows of bicolor lespedeza, the seed of which made the foundation food for quail in large numbers. This perennial bushy lespedeza costs very little to plant and maintain."

The seed of bicolor do not sprout or rot easily. They stick fairly well to the plants and so can be eaten even when the ground is covered with snow.

At other times, the birds simply scratch for the seed among the fallen leaves. Gwynn has found the seed can be depended on as quail food from November through April. By that time, early berries are beginning to mature.

Actually, according to recent research by Dr. Arnold Haugen of the Alabama Experiment Station, bicolor seed are eaten by quail every month in the year. This high carry-over of bicolor seed has been confirmed by farmers cooperating with local soil conservation districts in many parts of the Southeast.

Note.—The author is regional information chief, Soil Conservation Service, Upper Darby, Pa.

## DISTRICT PROFILE

DICK BUEHLER  
of  
IDAHO

WHEN E. R. (Dick) Buehler was first appointed supervisor for the Portneuf Soil Conservation District back in '45 they had to chase him all over the county to get him to take the job. Since then Buehler has been doing the chasing—for the district and soil conservation. He is in his second term as president of the Idaho State Association of Soil Conservation Districts.

Buehler, bushy browed, with wrinkles running in every direction from his deep set eyes, is a native son of the Gem State. His parents came from Berne, Switzerland, and introduced Dick to this world at the little Mormon settlement of Paris, Idaho, close to the shores of Bear Lake. Pioneering on the land has been Buehler's life ever since.

When you talk with Buehler about soil conservation you feel that he does not consider the subject one of passing interest, or his jobs as supervisor of the Portneuf Soil Conservation District and state president of the district association mere civic duty. He is strongly convinced of the urgency of action, for district organization, farmer education and technical help. He will tell you of the national conventions at Oklahoma City and Cleveland, "I have never seen men work so hard," he says.

Buehler did not start out as a farmer. He built his muscles in rock mining, digging for lead, copper and silver. After a while he settled down to a homestead in Oneida County near the Idaho-Utah border. Here he raised Turkey red wheat, dragging the sacked grain 20 miles to town on a sled. "That was a tough life," he remembers. Seven years was enough for Buehler to prove up the homestead and decide he wanted to live elsewhere. He sold the land to his brother and settled on the fertile Snake River bottom lands near Blackfoot. Here irrigation assured good crops and potatoes were making Idaho famous. In 1930 he bought his farm near Pocatello.

Dick Buehler is a hard worker. The many trips to the state capitol and to the "national's" are only a few of the places he has been. He says those that count are to small communities and grange halls, where petitions and hearings for district organization bring out the local farmers. Nor will he let the state legislators forget the vital need for better conservation laws. Letters are continually passing between his farm and the state capitol. Things are happening and Buehler in his quiet way is the man behind many of them.

He has promoted tours, field days, demonstrations. One was just for the business men of Pocatello. "We supervisors felt that it was important for merchants and professional men to find out what farmers were doing to conserve their land," he says.

Buehler believes in publicity. His district published the booklet "10 Keys to Soil and Water Conservation," and financed it by selling advertising. Last year he got the state association to publish a quarterly magazine for all 33 districts in Idaho.

Some of Buehler's early jobs as a civic leader well qualify him for the work he is doing today. He helped organize the local Farm Bureau, forming a 100 member \$100 club to finance the venture. He served on the Eastern Idaho State Fair Board 6 years and was its chairman in 1951. He is active in the Dairy Association, is a member of the Water Users Committee, the Beet Growers Association, and the Potato Growers.

His wife has shared in all these activities. Many times she has been the one to get speakers or films and carry the burden of organizing programs. She was first vice president of the American War Mothers for Idaho, president of the American Legion Auxiliary and vice president of the State Soil Conservation District Auxiliary (the first in the United States).

The Buehlers' three boys were in the war. Dick and Russ were in the navy. Jack, an air corps flight engineer, was lost in a tragic flight over Yugoslavia.

How can an irrigation farmer, who spends his summer chasing little streams of water across potato, grain and sugar beet fields, find time to be a public servant? Buehler is one of those industrious men who can always find time

to help a good cause. His farm covers 310 acres, part on the Fort Hall Indian Reservation. "It has taken me 7 years to land level and fertilize the whole place," he says. "One reason I keep my herd of 45 Holsteins is for the manure. I use a system of crop rotation to help out."

Characteristically, Buehler doesn't claim any crop records. He

would rather point to other benefits of soil conservation. Land leveling, he claims, has been the most important accomplishment in his area. The results have brought an enthusiastic statement by the irrigation engineer for the Indian lands that more water has been left in the reservoir at the end of the season than ever before—a direct measure of progress. —ROBERT B. BRANSTEAD.

Dick Buehler  
irrigating sugar beets.



# Wildlife as a Managed Crop

*The Chief of the Soil Conservation Service speaks on behalf of  
"a coordinated, total resource-use program."*

By ROBERT M. SALTER

WILDLIFE is a product of the soil, trees, grass and grain and is an important agricultural crop. Since the same land that produces our food supports the major part of our wildlife, the technologies we use in management of our farm and ranch lands inevitably have a major bearing upon the size and quality of this wildlife crop.

We are continually faced with the problem of fitting wildlife practices in with the management of the land for food production. Solution of the problem calls for practical understanding and cooperation by all concerned, on or off the land—farmers and sportsmen, wildlife conservationists and soil conservationists.

As I see it, the job we are up against is for all of us together to do everything we can to foster appreciation and production of wildlife by all those who manage our lands, at the same time being realistic in recognizing the practical economic facts involved in primary agricultural production. This can be done, I sincerely believe, without halting progress in drainage, flood prevention, or other land management measures essential for food and fiber production. And it can be done without wantonly sacrificing our game, furbearers, wild fowl and fish life. There is a sound middle ground.

Because so great a percentage of our land has been fenced and plowed, the farms and ranches of today comprise the country's principal wildlife habitat. By the same token, *the farmer is our principal game manager*. Moreover, most of the water that supplies our lakes and streams, as well as a great deal of that which empties into the sea, drains from or across these same farm and ranch lands.

Note.—This article is based on an address delivered at the Eighteenth North American Wildlife Conference, Washington, D. C., March 10, 1953.

Farmers and ranchers, as primary suppliers, will continue to have a great deal to say about our hunting and fishing. Their understanding of the importance of wildlife in our land economy is essential.

A basic tenet of the Service program long has been that the conservation of soil, water, forest, grass, cultivated crops, and wildlife must be tied together and scientifically coordinated on the basis of land capability and need. Encouragement of beneficial wildlife is an integral part of our soil conservation objectives.

Let's review some of the common soil and water conservation practices that are beneficial to wildlife by providing food and cover and general improvement of habitat. One of them is strip cropping, in which strips of tilled crops are alternated with strips of grass and legume crops. No less than  $7\frac{1}{3}$  million acres already have been converted to this pattern of farming in soil conservation districts.

Another practice is use of cover crops, with some 20 million acres planted to a wide variety of legumes and other plants. Stubble mulching is in use on upwards of 50 million acres in districts.

Of course, there has been the substantial development of farmland areas specifically for wildlife, through developments such as field borders, planting odd areas, and protecting and improving marshland areas more valuable for wildlife than for agricultural use. As was the case with the other practices in the coordinated conservation program, more wildlife area improvement was accomplished in districts last year than in any year before, bringing to  $1\frac{1}{4}$  million acres the total area thus treated.

Also important is the building of farm and ranch ponds, most of them primarily to provide



Good pheasant shooting and good farming go together.

water for livestock, supplemental irrigation or other farm needs, but with attention given by our technicians to fish production and wildlife use. The Soil Conservation Service alone has given technical assistance in the building of more than a quarter of a million ponds in the last 15 years. Many of them have created duck habitats where none existed before.

On many farms water is being impounded on low, wet lands that previously were of little use either for wildlife or farm crops. A couple of hundred such impoundments in the Allegany Soil Conservation District in New York have proved their worth in attracting and sheltering waterfowl. One of them, a 6-acre marsh, produced three broods of mallards the first year and sheltered large flocks of migrating ducks and geese in the fall, in addition to attracting deer, raccoon and smaller wildlife.

A properly coordinated land-use program anywhere must of necessity take into account many factors besides merely the development

and management of plow land and pasture. Thus, the Service considers the conservation and improvement of the Nation's woodlands to be an integral part of its coordinated program. Here, too, we approach the job, not as a primary forestry agency, but as a technical corps experienced in evaluating the capabilities of the land and in assessing the resources and requirements of the farmer.

Part of our job is to encourage the landowner's appreciation of his woodlands in his over-all farm operation, and to help guide him in doing what is needed to protect, maintain and utilize the woodland correctly. That is, not for wood products alone, but also for watershed protection, erosion control and wildlife habitat.

Our vast acreages of native grasslands, or range land, likewise are of such major importance in our agricultural economy that they require a proportionate share of our attention in developing the Nation's coordinated soil and

(Continued on page 257)

# Boy Scouts Work on the Land



*A rapidly expanding program carries conservation knowledge to future community leaders.*

By TED S. PETTIT



THE Boy Scouts of America cover a wide range in their program of resource-use education. This program is designed to develop certain desirable attitudes in more than two and a quarter million members of Scouting; it also aims at achieving better land use practices through specific work-on-the-land projects. Potentially, this may be the biggest conservation education program ever undertaken by a single organization, and a potent force in the total American resource conservation effort.

Boys may enter Scouting as Cubs at age 8, and continue as Boy Scouts (ages 11-13) and Explorers (ages 14 and up). Programs are geared to the age level and include requirements which give opportunity for the boys to advance in rank. Elements of conservation have been integrated in these advancement requirements.

For example, there are projects for Cub Scouts in nature, gardening and conservation intended to show these younger boys their dependence on natural resources and how they may help in using them wisely.

Boy Scouts, too, work on certain conservation projects as part of their advancement requirements from Tenderfoot through First Class. In addition, Scouts may work on various merit badges, among them those for soil and water conservation, forestry, and wildlife management. As of January 1, every Scout is required to earn one of these badges to advance to the highest rank of Eagle Scout.

Note.—The author is assistant to director, editorial service, Boy Scouts of America, New York, N. Y.

Explorers, for their part, may work on merit badges or elect to work on a program of their own selection, which frequently includes projects in various fields of conservation.

These requirements are an important, but by no means the most important, aspect of the conservation program. What counts most is the attitudes that result from the work involved.

Many methods are used to get Scout leaders to provide the necessary opportunities. One of these methods is the Three Year Program, now in its second year, the slogan of which is, "Forward on Liberty's Team." In this national program, each of the 85,000 Cub packs, Scout troops and Explorer units over the country is encouraged to set for itself nine goals each year. One goal is the completion of at least one conservation project.

Scouting has long been known for its "good turn." This conservation project goal is classed as a community service project. Scout units are encouraged to work through local professional conservation agencies or technicians to find a project in their local community that meets a need. Then, with proper guidance, they plan the activity and carry it out.

Much of the success of the conservation program is due to the excellent cooperation of soil conservation districts. By acting as merit badge counselors, Cub leaders, Scoutmasters and informal consultants, supervisors and technicians are doing much to further the Boy Scout resource conservation education program.

During 1952 the soil and water conservation merit badge manual was published. The manuscript was prepared by Bernhard A. Roth, of the Soil Conservation Service with guidance from Bert D. Robinson, also of SCS and National Merit Badge Counselor for soil and water conservation.

The manual explains Boy Scout conservation policies, and the individual requirements which lay out work for boys in camp or at home, or for Scout Troops seeking community activities.

Some 49 percent of all Scouts live on farms or in rural communities. Thus, what is learned in the Scout conservation program may be directly applied to the land and assist to some degree in improving land use practices.

The Boy Scouts know that they must have trained leadership, both professional and volunteer. This training must be not only in conservation ideals but also in methods of program planning and execution.

To that end, training courses are held for adult leaders each year. Instruction is provided by technicians of the Soil Conservation Service. During 1953, courses will be held in Osage Beach, Mo., and in Mendham, N. J.

One of our major objectives is to bring under conservation planning all of the one-third million acres owned by the Scouts as campsites.

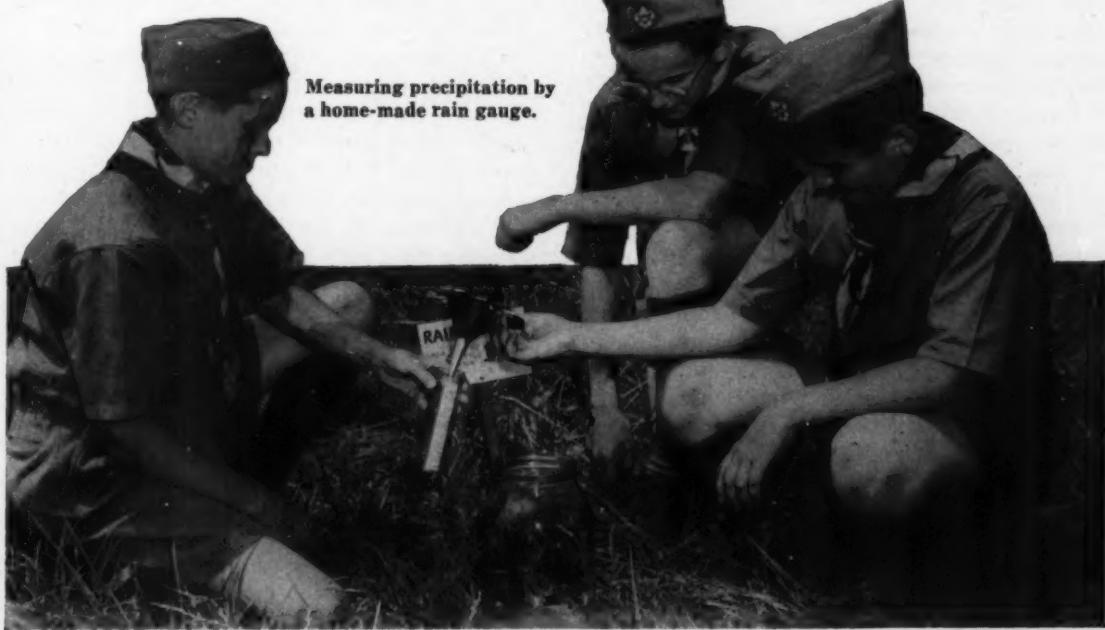
Campsites, like farms and ranches, are subject to erosion, grass or forest fires and other catastrophes. Putting conservation plans into effect on these campsites brings a very real economic benefit. On one hand, the money spent annually as a result of washing, streambank

erosion, gullying or fires can be put to better use. On the other hand, cash income for camp forests, campsite pastures or grazing permits can be used to improve facilities and make room for more boys. Finally, there is the value of these campsites as conservation demonstration areas, where not only Scouts learn good land use practices, but also where leaders, parents and neighboring farmers or ranchers may see on-the-ground examples of recommended practices.

There are approximately 600 individual camps scattered over this country, and 800 demonstration areas. It's impossible to estimate how many more acres are represented by our three million Scouts and leaders. It's true that many of these come from metropolitan areas and own no land. But what they see on a well-managed campsite is sure to affect their thinking and influence their attitude. The direct application of land use practices on the land owned by parents and leaders would go a long way toward bringing under conservation planning every acre of land in America.

By the first of this year nearly 50 of the 541 Boy Scout Councils had signed as cooperators of

Measuring precipitation by a home-made rain gauge.



soil conservation districts and had received conservation plans for their campsites. The acreage involved makes up more than half of the campsite total.

More campsites must be brought under conservation planning for the number of persons directly concerned is still less than 10 percent of the total Scout population. The task of bringing into the program the other 491 Scout Councils is being tackled systematically.

The Scout executive (a professional, paid worker who is the executive officer of the Scout Council) and the Council executive board (a group of key community leaders, volunteers) enter the campsite as a cooperator of the district and apply for help. Many times it happens that the executive and board members do not even know of the existence of the district and the benefits which it offers. Here is where there is a selling job to be done.

When the Council receives its camp conservation plan, the executive, the key volunteers, and the soil conservation district technician sit down and discuss it. Some of the practices call for hired labor and equipment. They are obviously beyond the capabilities of boys or even adults not versed in the techniques involved.

In this meeting such outside work is outlined and, in addition the work that is within the capacities of boys—such things as planting grasses, legumes, trees, shrubs and vines; thinning and pruning woodlots; helping to keep the fish populations in the pond in balance, and similar activities.

Then a program is developed so that both sets of projects will be completed.

Typical is the description of a recent conservation project, which is reprinted from American Forests Magazine for April 1953:

"Something new was added to Boy Scout camping when the Coastal Carolina Scout Council, with headquarters in Charleston, S. C., launched its conservation program recently. Through a combination of the features of a farmers' field day and a county fair, Scouts and leaders not only learned at first hand the need for the intelligent management of forest resources, but they actually carried out conservation practices on the land.

"The idea for the unique conservation camp project started when the Council Executive



With shovels and other implements, Scouts learn how to construct barriers helpful in checking flames in undergrowth.

Chemical tests of fishing waters are made by a technician of the New Jersey Fish and Game Commission.

Board approved the conservation plan for its 162-acre campsite and thus became a cooperator of the Charleston Soil Conservation District.

"The campsite, formerly part of a large plantation, now is largely covered with trees. Although part of the area is suited for cultivated crops or pasture, obviously such activities would conflict with the primary use of the land—Scout camping. But growing trees does fit in with camping, so the largest part of the conservation plan calls for the management of the forest to produce some cash income for camp maintenance; lumber for new buildings; wood for fuel and poles for campcraft projects.

"A 2½-acre plot is kept in pasture and a 4-acre plot is planted in various truck crops by neighboring farmers, under good land-use practices. These small areas produce a small cash return, but their primary purpose is for conservation education. About 40 percent of the Scouts in the Council are farm boys, and these areas with the woodlot provide demonstration laboratories in which Scouts learn practices which may be applied on their own farms.

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"During the week before the conservation camporee (and for the uninitiated in Scout terminology, a camporee is a special weekend or overnight camp) six demonstration and activity areas were set up around the campsite.

"These areas were: (1) soil profiles for instruction in soil types and land capability; (2) pine seedling planting; (3) wildlife food shrub planting; (4) woodlot management; (5) pasture improvement; (6) woods fire prevention and control.

"Since setting up these demonstration areas required considerable time and machinery, outside help was required. Technicians of the Soil Conservation Service and South Carolina Commission of Forestry, farmer-cooperators of the soil conservation district, and a farm equipment

dealer supplied men and equipment for such jobs as plowing seedbeds, removing brush, leveling land and plowing the pasture, marking trees for improvement cuttings and building fire breaks.

"But so that Scouts would not miss the thrill of seeing the equipment in action, finishing touches were left for the last minute and some of the heavy work continued while Scouts watched and worked.

"The program itself started on a Friday evening in the camp dining hall. Soil and forest technicians briefly outlined the need for the conservation of soil, water, grass, forest and wildlife resources and showed dramatic movies to illustrate their points.

"The work-on-the-land part of the program



M. W. Sullivan, SCS soil scientist at Kingstree, S. C., tells some Scouts about soil profile.



Scouts observe fish seining in connection with lake survey by New Jersey Fish and Game Division.

started at 8:30 the next day as groups of 50 Scouts and leaders arrived at each of the 6 activity areas. At the end of each hour, each group moved to the next station, so that after 6 hours each boy had taken part in each of the 6 activities. Of course, they took time out for lunch, and that was a beef stew supplied by the Charleston Chamber of Commerce.

"At 3:30 the entire group of more than 300 was supposed to gather at one point to watch a selected and trained group of older Scouts fight and control a small (controlled and carefully planned) woods fire. But a heavy rain forced postponement of that session till a later date.

"Some 50,000 slash pine seedlings were planted in the course of the day by 6 groups of 50 Scouts each.

"As each group arrived at the planting site, instruction was given in the technique of hand planting. Then Scouts were organized into teams of three. They were lined up across the field and shown lines along which they were to plant, each line being marked with poles. One boy of the team carried the seedlings, the second carried the dibble and made the holes, and the third dropped the seedlings in the hole and tamped the earth around the roots.

"After planting a dozen trees, the boys within a team rotated jobs so that none would get tired and all would have experience in each phase of the project. (Scout leaders and foresters must have been 'living right' that week, for scarcely had the planting ended, when a heavy rain came down and some 2.09 inches fell in the next twenty-four hours. Those trees should have a high survival rate!)

"Scouts were told that these seedlings should produce a cash crop in 12 to 15 years when the first one or two thinnings could be sold for pulp

or fence posts. These, and the next thinnings would reduce the plantation to a stand which would be the maximum that the land would support.

"At the woodland management station, Scouts saw a quarter-acre marked for an improvement cutting. Each tree was labeled telling why it should be cut or why it should be left to put on more growth.

"In this area, Scouts were shown how foresters determine the rate of growth and how they determine which trees to cut. Each Scout had the opportunity to use an increment borer and to estimate growth rate and volume. In-

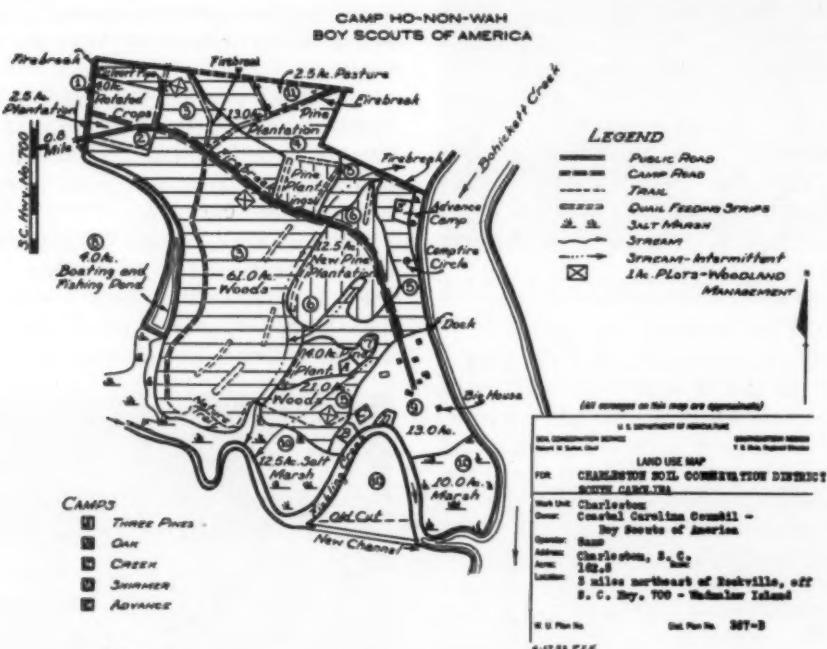


Giving a little pine a chance to be a big pine.

struction was given in measuring diameter, height and number of logs. Then Scouts measured the d.b.h. and determined volume of five trees and checked their results against a master card.

"One of the more interesting aspects of the woodlot management demonstration was that phase concerned with what to do about undesirable hardwoods that should be removed. These weed trees were growing in both the new pine plantation and the managed pine woods.

"It was decided that these trees might well be poisoned and left to season on the stump.



Thus, Scouts had a long-lasting supply of fuel for cooking fires, and logs and poles for axe practice and campcraft use.

"Since too many people in that section of the south minimize in their own minds the damage caused by woods fires, Scouts were shown what happens when a pine woods is burned over. They counted the young seedlings growing in a 20-foot square, and this called for a hands-and-knees coverage of the area and a pawing aside of duff to find the tiny seedlings. The particular area had been burned over in years past, with the result that the stand consisted only of 20-to 30-year-old pines. This was contrasted with another stand of mixed aged pines—from seedling to 5-year-old trees to 30-year-olds. This was a dramatic example of how fire does interfere with the health of the forest as far as sustained yield crops is concerned.

"The conservation plan for the campsite called for the construction of new fire breaks to protect the old as well as the new plantings, and these were built with power equipment (tractor and plow) sent in by the State Forestry Commission. This same equipment was used to plow a double line around a circle with a hundred foot

diameter—that area to be used for the demonstration of woods-fire control when the woods finally dry out after the torrential downpour on the day of the camporee.

"This conservation education camp was a unique and interesting experience for the boys who took part. But more interesting perhaps, was the cooperation of the community as a whole that made it possible. And that spirit of cooperation speaks well for the future of the conservation movement in America.

"First, it should be remembered that nothing forced more than 300 Scouts and leaders to take part. They did so entirely of their own interest, and the fact that each received an attractive neckerchief donated by the soil conservation district was an added attraction, not the motivating factor in their participation.

"But the project could not have been held were it not for the guidance and help of the district, its technicians, supervisors and operators; and the State Forestry Commission with its help in personnel, equipment and a very strong interest in forest-management education.

"In addition, the Farm Bureau, the county agent, the Chamber of Commerce, neighboring

farmers, a fertilizer dealer, a farm equipment dealer, and the Charleston newspapers all did their part to make the project a success.

"Since representatives of other Scout Councils, the regional and national offices of the Scouts, and the local Girl Scout Council all attended as observers, there is little doubt but that the Charleston project served also as a pilot project that will spread widely over the country. For like the farmers' field days or face-lifting projects that have spread widely, this method dramatizes conservation while it teaches basic principles but, best of all, it provides a chance for Scouts to learn by doing."

"This project has permanent value in that Scouts may return to the camp weekend after weekend and continue the projects they started at the Camporee."

Among the other campsite conservation plans that have been developed, and which show the scope of land-use practices involved are:

Clarion County, Pa.—Protect 138 acres of woodland from fire and grazing; timber harvest and improvement cuttings.

Springfield, Mo.—Protect woodland from fire; improvement cuttings and timber harvest; stock stream with bass fingerlings.

Huntington, W. Va.—218 acres. Plant pine and spruce seedlings; plant shrub borders; woodlot management; construct farm ponds; manage ponds for bass—bluegill production; plant grass to reduce erosion.

Grinnell, Iowa—128 acres. Pond constructions and management; fence new management; tree planting.

Middletown, Ohio—175 acres woodlot management. Soil improvement before tree planting.

Huntsville, Tex.—2,500 acres. Pond management; marsh management; new pond construction, timber harvest and management; wildlife plantings; road construction.

Pecos, Tex.—2,800 acres. Range improvement. Bring grazing animals into line with annual forage growth. Wildlife plantings, pond construction and management.

It is obvious from this summary that Scout campsites typify the land use problems of the area. It seems clear that campsite conservation demonstrations can serve a real function in education, whether for city boys or those who

may more directly apply what they learn.

In summary, the Boy Scouts of America has these objectives for its resource conservation education program: To provide the means and opportunities for boys to learn desirable attitudes and concepts regarding the proper use of the land so that when they become adults, they will be conservation-minded farmers and ranchers, intelligent voters, or perhaps conservation technicians. With the continued valuable help of the soil conservation districts, and the other needed individuals and agencies, these purposes may be achieved.

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## WILDLIFE AS A MANAGED CROP

(Continued from page 249)

water conservation program. Here, of course, the primary objective is the improvement and maintenance of forage for livestock so essential to supplying us with meat, wool and leather. This same land, however, must support an important share of our wildlife. The job is to see to it that the needs of both domestic livestock and wildlife are met and soil moisture conservation problems solved.

Experience has shown that this can be done effectively through range improvement and management practices that result in more grass for better feed and ground cover, and development of adequate water supplies. Taking unsuitable lands out of cultivation and seeding them to grass, or planting them to trees, and discouraging the cultivation of grass and forest land not suitable for cropping, also has helped immeasurably to improve the conditions for the perpetuation of wildlife.

The wildlife benefits accruing from tree planting and farm woodland management are well known. The forestry part of soil conservation district programs to date has included close to a million acres of tree planting, between 11,000 and 12,000 miles of field windbreaks, and about 19 million acres of conservation woodland management. Meanwhile, range and pasture improvement, which improves food, cover and water for wildlife, has been applied on 78 million acres in districts; and range and pasture seeding has totaled 12½ million acres.

Watershed development and upstream flood

prevention work is a growing and important field of conservation of great interest to all who are concerned with improvement of our renewable natural resources. Watershed treatment includes, in addition to conservation farming, range management and forestry measures, many works of improvement, such as small floodwater retention dams and reservoirs, diversions, and channel stabilizing structures.

The benefits of watershed improvement to fish and wildlife are many. Flood-prevention treatment results in improved habitat for wildlife on watershed lands, through increase in grass and legumes, shrubs and trees. There are benefits to waterfowl, fish and furbearers through establishment of ponds, small dams, and other water-holding and water-detention structures, stabilization of stream flow, and reduced sedimentation of streams, reservoirs and estuaries.

Drainage of wet lands is a conservation practice about which there has been some difference of opinion between soil conservationists and wildlife conservationists. There are approximately 100 million acres of wet lands including marshes, swamps and small water areas in the United States at present. Much of this acreage is intermingled with drained land on thousands of farms scattered throughout the country. Estimates made from surveys by the Soil Conservation Service indicate that not more than one-fifth of the acreage of wet lands is suitable for cropland under present conditions. The other four-fifths of the acreage is not suitable for cropland or for pasture either because the soil is unproductive or it is uneconomic to drain the land. We know that much of this latter area can be improved for waterfowl and furbearers; and it is our policy to encourage such development by the owners.

Most of the drainage that has been done by farmers and ranchers with technical assistance from the Soil Conservation Service has been accomplished by tiling and open ditches on cropland and pasture. Less than 1 percent of the 7½ million acres total drainage with which the Soil Conservation Service has assisted has affected swamps, marshes, or open water areas of any conceivable value to waterfowl.

Wildlife conservationists have been especially concerned about drainage in Gulf and Coastal Plains states. I believe that this problem can be

resolved. The national needs for food and fiber at this time do not demand bringing much of this land into production. Under current price relationships, it is uneconomical to do so.

Whether extensive reclamation work in this area becomes necessary will, in my opinion, depend to a large extent on how fast we get on with the conservation job on land now in production. The faster we move on the job of improving and protecting the land now in cultivation in all parts of the country, the longer we can leave these lands for wildlife use. I consider some of this land as a reservoir of future potentials that can be put to crop use if our national food situation demands it.

There is, of course, some land to be found on farms now being operated where drainage is necessary to improved economic operations. Such an instance in Maryland was the subject of that State's winner in last year's soil conservation district speaking contest. His farm is in the swampy area of southern Maryland. Fields once farmed have turned to swamp because of silt deposits resulting from top soil eroding from the higher land in the watershed. His richer deposits of wealth lie locked away in the swamps. He needs to get his land drained for economic production. I'm sure that wildlife conservationists understand his needs and want to see his drainage problem worked out. I believe it can be worked out without sacrificing wildlife.

Wildlife conservationists have also been concerned about pot-hole drainage in the Dakotas and Minnesota. Here, without doubt, there is a conflict of interest between the farmer and wildlife conservationists.

This problem has come about because of progress in modern agriculture. Years ago the pot-holes were difficult and costly to drain. Working around them with horse-drawn machinery wasn't too bothersome. Now, machines have made it relatively easy to drain the pot-holes at relatively low cost. With the mechanization of agriculture, the pot-holes have become a bigger nuisance to the farmer. Farmers get stuck with tractors where they didn't with horses. Consequently, there has been recent increased interest in pot-hole drainage.

I believe there is a need for helping farmers to recognize fully the wildlife values of pot-holes. The farmers who own the land are the

ones who need to be convinced. Decisions to drain are private decisions. We believe that if farmers have full information on the wildlife values of pot-holes, many would be willing to make the economic sacrifice and put up with the inconvenience necessary to leave them. Getting this full story to farmers, I believe, is a challenge to wildlife conservationists.

Certainly, there is no conflict in thinking when it comes to such operations as tile and other field drainage for wet crop or pasture lands or rehabilitation of old ditch drainage systems. And when the landowner wishes to explore the possibilities of draining marshes, swamps, or areas of open water, Soil Conservation Service technicians are guided by careful use capability surveys that indicate soils which might be more useful for wildlife habitat than for agricultural purposes.

It is also Service policy, as a further safeguard to all interests concerned, to draw upon, in addition to its own engineering and other technical facilities, the advice of the Fish and Wildlife Service and the State wildlife agencies before detailed plans are prepared for drainage of swamps, marshes, and areas of open water.

It is only when wildlife conservationists and soil conservationists both work with farmers that it is possible to arrive at adequate information on the effect of any proposed drainage on both the land and wildlife and to bring to the attention of soil conservation districts and individual farmers the facts necessary to insure consideration of wildlife in the proper use and treatment of the land.

That is the Service's honest aim. In working toward it, we will go as far as we can to discourage drainage of land that is better suited to wildlife, particularly waterfowl, than it is to the production of crops. Sometimes, in fact, we have occasion to go even further, and help put water back on land instead of draining it off, as I have already mentioned.

While the Soil Conservation Service is trying to do all it can to protect and improve wildlife on the farms and ranches of the United States, technical assistance in conservation cannot fully dissolve the conflict of interest between farmers and wildlife conservationists. In fact, I doubt whether the conflict can be totally resolved without a more intensive effort to de-

velop greater farmer appreciation of wildlife, and without methods for compensating farmers for hunting and fishing privileges.

Many farmers tell us that one of the satisfying results of practicing soil and water conservation farming is the restoration of even better game than originally inhabited their farms. It is something they can enjoy and share with others.

Direct returns from their increased wildlife have been realized and welcomed by many conservation farmers over the country. These range from fish and game for the table to revenue from furs, fish, and hunting and fishing leases.

Soil conservation districts constitute an ideal focal point for bringing to bear the cooperative efforts from many sources that are necessary to meeting the problem of increasing production of beneficial wildlife on American farm lands. These districts have obtained cooperation in these efforts from the Fish and Wildlife Service, State game departments, agricultural experiment stations and other agricultural agencies and leaders, sportsmen's organizations and wildlife conservation groups, and other interests, including schools and youth organizations. Through the Pittman-Robertson wildlife habitat improvement programs, for example, 35 states now are providing assistance to soil conservation districts.

The support and cooperation which wildlife conservation groups have given soil conservation districts in the past have been most substantial, indeed, and have gone far in helping the districts to show the way to greater wildlife abundance through soil and water conservation work on the country's farm and ranch lands. The opportunities for continued and expanded teamwork in this field are virtually unlimited. The whole, broad conservation job ahead depends for its successful advancement and completion upon the efforts and contributions of many people and interests working together. The goal is a coordinated, total resource-use program that benefits the entire Nation, as a basis for building for future welfare and national security.

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**KEEP ABREAST.**—A subscription (\$1.25) to this magazine helps keep district farmers well informed.

# Find Sermons in Soil

By H. N. KELLY

PASSAGES of Scripture are seen from a new perspective by some Negro ministers in North Carolina. After a study of soil and water conservation during 6 weeks of in-service training, they take a serious view of responsibility for land stewardship.

This was a part of the annual training of active ministers of the Zion Baptist Association. They represent a total of 38 churches located in Anson and Union Counties, and have a combined membership of 4,783. The training course was held in Wadesboro. A number of the ministers are farmers as well as preachers.

John M. Jones, local Negro conservationist, taught the class, which met for 45-minute periods 5 days a week.

Rev. J. R. Faison, a resident minister of Wadesboro, conducted the customary religious training. He is, in addition to his duties as pastor, engaged as a teacher of ministers in active service. Directed from Shaw University's Department of Religious Education, he is sent from time to time to various parts of the State for teaching work. This latest assignment was, by coincidence, in his home town.

This year, for the first time, Reverend Faison is both director of religious education for the Zion Group and also its teacher. Prior to this year the Rev. E. H. Martin has been director. It was Reverend Martin who offered prayer at the opening of a meeting several years ago when

Note.—The author is soil conservationist, Soil Conservation Service, Wadesboro, N. C.

**MACHINERY vs. MULES.**—The rapidity of change in the agricultural South is noted by C. C. Brown who established the first farm equipment dealership in the Chipola River (Fla.) Soil Conservation District in 1936. Brown points out that there were only six farm tractors in the three counties of the district at that time. He estimates that there are now 1,800.

Dr. Bennett was welcomed by the homefolks with a celebration in his honor. That was not only a beautiful prayer, it was also impressive.

This man rarely says anything which isn't expressive, for that matter. Commenting on soil neglect and excuses often offered for sins of omission, he remarked dryly: "The trouble with us is that we are always looking for the other side of the field." This is the person who initiated the idea of the school in conservation recently ended. He himself has attended the classes regularly, although he is no novice at applying conservation. His farm, located a few miles north of Wadesboro, has been operated since 1946 according to a plan made with the Brown Creek Soil Conservation District.

Reverend Faison, former high school principal, is especially well fitted for his present work as minister and teacher of religious education. Six weeks ago he admitted he knew nothing about contour cultivation. He has, however, been so impressed by the studies conducted by Conservationist Jones that he is determined to know more about care of the good earth.

His influence is considerable among his people, and he expects to have similar instruction given to ministers of other sections.

That these ministers will use the knowledge and inspiration acquired there is little doubt. A very early incident during the study course bears out that conclusion. Bob Horton, local soil scientist, had been out on a field trip with the class. They had examined soil profiles, found out how to gauge effective depth and so on. On the way back to town a member of the class rode with Bob. They were talking as they went along, Bob doing most of it to drive home some impressive soil facts. "There you are, Mr. Horton," his companion said. "You have given me a subject for my next Sunday's sermon."

All these men, plus some deacons who have had a part of the training, will use and pass on to others many of the facts and ideas given them.

Those participating will be awarded a cer-

tificate by the Brown Creek Soil Conservation District. Formal presentation will come during a conference in late spring when a large crowd will be gathered.

The working of the certificate was discussed earlier with Reverend Faison. The first idea was to give those who met certain standards a cer-

tificate of having completed the study course. Reverend Faison objected, saying: "No, let it only read, 'took part in the study.' We have, I hope, not completed it. I want these same men and others to take it next year, and possibly every year for a long time."

They will probably do just that.

## A Look at the Record

**Final figures for last year show what was done on the land, and point to larger opportunities ahead.**

By R. W. ROGERS

WE can put down 1952 as an outstanding year for the Soil Conservation Service. It was a year marked by realignments, new responsibilities, changing trends, and an increased load of technical work.

Nearly all of the facts show an advance. Within the year there were greater coordination of program activities, improved standards of work done, and wider and more efficient teamwork. Increased efficiency of the field staff, together with more emphasis on operations management, paid off in terms of more and better conservation put on the land.

Several sources of information are available for evaluating progress. There is ample evidence of an upward trend and of the vast opportunities ahead.

Our 1952 accomplishment in soil and water conservation, is of National significance. In this article I discuss (a) soil conservation district formation; (b) Service assistance to district cooperators and ACP participants; (c) conservation planning; (d) application of practices; (e) soil surveys; and (f) some indications of the job ahead.

At the end of 1952 nearly 2,500 districts had been formed in the United States, territories, and possessions. These districts contain about

80 percent of the agricultural land and 85 percent of all the farms and ranches, as shown by the 1945 Census of Agriculture. Eleven states, the Virgin Islands and Puerto Rico are completely covered with locally-managed districts.

The number of new districts formed annually will become less and less, as we approach total coverage. In 1952, only 82 new districts were formed, as compared with 131 in 1948 and 218 in 1944. Fourteen of the new districts formed last year were by deductions of area from other districts previously organized, and seven districts were discontinued—giving a net increase of 75 districts during the year. The separation of multi-county districts is likely to continue in some states, and there will be fewer additions to older districts in the future.

Several years ago we estimated that 2,640 soil conservation districts would completely cover the agricultural lands of the country, perhaps by 1954. That would leave some 140 new districts yet to be formed this year and next. It now appears more likely that about 60 new districts will be formed this year (1953), and the remainder will be spread out over a few years. Tennessee, Pennsylvania, Missouri, Oregon, and California are the main states where new districts are likely.

This decline in rate of district organization, as national coverage becomes more nearly complete, shows the need for the appropriate agencies to strengthen and improve the educational

Note.—The author is chief, records and reports, Soil Conservation Service, Washington, D. C.

work in areas still outside of soil conservation districts. The formation of new districts is to some extent dependent on such effort. There also are many older districts where increased educational leadership would improve the efficiency of the technical staff assigned to them.

About 1,225,000 farmers and ranchers are actively cooperating with districts and receiving technical assistance from the Service. Many cooperators also receive financial assistance through the Agricultural Conservation Program. This is nearly one-fourth of the 5 million farms and ranches in districts.

During 1952, an all-time record of 262,000 new district cooperators began their long-time conservation programs. This was an increase of 46 percent over the previous year, showing the results of progressive planning. Of this number, 67,500 prepared basic conservation plans with Service assistance, and 195,300 signed cooperative agreements in the initial and advanced stages. This shows a national ratio of nearly 3 initial and advanced agreements signed to 1 basic plan prepared. The regional ratios varied from 0.6 to 1 in some regions to 40 to 1 in others, showing the extreme range encountered in different parts of the country. At the end of the year about 80 percent of all active cooperators had basic conservation plans.

The increase in district cooperators runs approximately 50,000 in 1940, 200,000 in 1944 (4 times); 600,000 in 1948 (3 times); 1,225,000 in 1952 (2 times). The trend is steadily upward.

During 1952 the Service also provided technical services for 472,000 ACP participants referred by county PMA committees. Of this number, 48 percent were district cooperators, 15 percent became cooperators, and 37 percent (or 176,000 participants) were not district cooperators.

Added emphasis was placed on permanent-type practices. This increased the work load of districts, created new work on additional farms, brought more farmers and ranchers into the district program, improved the standards for certain practices applied—and substantially increased the total volume of work accomplished during the year with SCS assistance.

Transfers of 5 percent PMA funds, along with the assignment of PMA employees to work under SCS technical supervision, prevented a

more severe drain on technical services available to districts. The staffing of 76 additional new districts and the new responsibilities in ACP did, however, mean that the SCS staff was spread thinner and less time was available for the routine matters of districts. Assistance to farmers and ranchers outside districts was more difficult because of the increased technical load. Nevertheless, the combined forces made it possible for the Service to assist in the application of 20 percent more work on the land than the year before.

The progressive planning procedures issued in 1951 had a tremendous impact in 1952. More individual farmers and ranchers were served; many ACP participants became district cooperators; and the opportunity for broad areas of new work was enlarged.

Initial and advanced stages of planning on individual farms and ranches have made it possible for the Service to assist an increased number of cooperators when they are ready to go ahead with certain practices. At the end of 1952, there were 258,000 cooperators who had taken the first and second steps. Each of them is working toward a basic conservation plan fully applied on all their land, with due consideration for land capability and treatment needs.

A basic conservation plan for every district cooperator is still the ultimate objective. At the end of 1952, there were 967,000 district cooperators with basic plans. Their farms and ranches comprise 270 million acres, on which about two-thirds of the planned work has been applied. These figures include active conservation plans prepared previously, and initial and advanced agreements converted to basic plans in the last 2 years.

Watershed planning for conservation and flood prevention is increasing in many parts of the country. Works of improvement on the 11 authorized watersheds are being installed as rapidly as funds permit. Group enterprise work for drainage, irrigation, and erosion control has continued at a normal rate in recent years. All of these watershed, or group job types of work, now consume relatively small amounts of field time of Service technicians. The present urgent work load on individual farms and ranches, in conjunction with insufficient staffing for the total job, seems to prevent further ex-

pansion in these phases of the work at the present time. The interest in such work is high, and the needs are great, to protect and improve the land resources for an increasing population.

The rate of application of practices was at its highest in 1952. For district cooperators, the reported increase in application of practices was 11 percent above the previous year; this, notwithstanding a slight reduction in the available field staff. Including the additional work with non-district ACP participants, which was partly financed by 5 percent PMA funds, there was an increase of 20 percent in application in 1952 over the previous year.

There has been some shifting in types of work on which the Service renders assistance. Vegetative practices increased until 1950 and have declined since, whereas permanent-type practices have increased rapidly since the famous Memorandum No. 1278 in 1951. During 1952 the index for construction practices rose to 143 while that for vegetative work stood at 118 as compared with 1948.

Within the last two years major emphasis has been on ponds, farm drainage and irrigation, while diversions have remained about the same and terraces have declined. Seeding of new pastures and tree planting show the most significant increases, while other practices such as cover cropping, stubble mulching, and strip cropping now are at a fairly uniform rate.

Our soil surveys are now moving at the rate of around 36 million acres annually. About 429 million acres have been surveyed in soil conservation districts—or 37 percent of the agricultural land in the United States and insular possessions.

The backlog of soil survey information is becoming seriously low in some sections and needs speeding up. For example, consider the 72 million acres that came under district agreement in 1952, when only 36 million acres of new soil surveys were made. The rate of farm planning is already double the annual survey rate, and it continues to increase. In fact, the lack of adequate soil surveys could become a bottleneck to overall planning. We did not have sufficient resources to carry on the other work and to increase the acreage of soil surveys at the same time.

Past and present progress indicates that—

The historic trend of more and better conservation work by district cooperators can continue upward, especially with the teamwork of ACP participants.

The shifting in types of work may tend to stress permanent practices somewhat more than vegetative or recurring practices.

The dynamic period of conservation action has begun, with vast opportunities for increased accomplishments on the land in the future.



## REVIEWS

**FOUNTAINS OF FREEDOM (Moral and Spiritual Values in American Democracy)**, by George E. Rotter, Andrew A. Weresh, and Erwin Goldenstein, 229 pp. 1953. Mountain View, Calif. Pacific Press. \$3.50.

All of us who are enthusiastically interested in conservation education do not limit this kind of education simply to the conservation of natural resources. We are also interested in the conservation of human resources.

I recently came upon a new textbook which is, I feel, one of the answers to the problem of aiding directly in developing good traits among our young people. It is a basic textbook, specifically designed to help ninth and tenth graders to develop such traits as thrift, honesty, courtesy, sharing, fair dealing, respect for parents, loyalty, charity and brotherly love. It instills a love for the land and an appreciation of the gifts of nature. I would rate this book as not only excellent for school use, but also as first choice for every home with adolescent children.

The need for more adequate citizenship education in our schools has been discussed a great deal in the last few years. School people who are serious in their determination to stress the importance of high moral fiber and good citizenship will find in "Fountains of Freedom" an instrument that is practical in pointing up the really important character traits.

The book is designed for use in the regular English or Social Studies program of the schools. It is a practical one for both pupils and teachers, since it carries a multitude of activi-



ties which will aid the pupil in developing worthwhile character traits, and in learning of the importance of these traits in every day living. Teachers will appreciate the concise Teachers Manual which accompanies the book.

A splendid treatise on soil conservation is also found in the book. This section is designed to impress young people with the need for soil conservation and their responsibility for acting as trustworthy custodians of the land. Other natural resources are given consideration as well.

It is my feeling that those of us who are professional conservationists, or who are affiliated with any organization concerned with the conservation of human and natural resources, will do well to call "Fountains of Freedom" to the attention of local school administrators and teachers.

The authors are members of the Nebraska Department of Public Instruction who have been engaged in public school work for many years. They are closely associated with the Nebraska Conservation Education Program. George Rotter is Supervisor of Conservation Education in the Nebraska State Department.

—ADRIAN C. FOX

**PLEASE KEEP THAT SILT HOME!**—In 12 years Worthington, Minn., spent \$250,000 dredging near-by Lake Okabena. The lake is valued highly for recreation and as a cooling unit for the city's power plant. Silt was a problem. Worthington decided to stop dredging and find out where the silt came from. Technicians traced the trouble to Clarion soils on 3 to 4 percent slopes that have been heavily row-cropped for 15 to 20 years. The city is now trying to get farmers to organize a soil conservation district.

**DADS CATCH FIRE.**—In the Harrison (Ind.) Soil Conservation District, the Vo-Ag teacher asked Area Conservationist Marion W. Merritt to help plan a farm which the Future Farmers chapter has under 5-year lease. Merritt suggested that they get the students' fathers in on the deal. Farm Planner Jim Acres held meetings with the students, assisted by Nuel Edmonds, soil scientist, and John Holwager, forestry specialist. Although the township has been one of the district's weakest areas, the district now has 21 applications for farm plans from students' fathers.

**HOW AN IDEA SPREADS.**—John C. Bahnsen, work unit conservationist at Rochelle, Ga., reports that the editor of his local weekly paper, *The Abbeville Chronicle*, is using a conservation slogan at the top of the front page on each side of the name of the newspaper. The idea was picked up and passed on to other newspapers by the regional office of the Soil Conservation Service. During the past four months, about 75 requests for slogans have been received and tear sheets from newspapers throughout the region indicate that the slogans are being widely used.

**MULTIPLE-USE POND.**—Darnely Peterson, a farmer with the St. Croix (Virgin Islands) Soil Conservation District, reports that a farm pond built with SCS technical assistance in October 1952 has been full since the rains began. It provides water not only for Peterson's 40 head of cattle but also for all the stock of the people in the local village, and for washing and other purposes. The ice factory is again able to pump from its well, located a few hundred feet below the pond, and the water level in Peterson's own well has risen 15 feet. The village boys are using the pond for swimming.

**78-YEAR-OLD CONSERVATIONIST.**—Earnest Hillis, of Fleming County, Ky., has grown 65 tobacco crops during his 78 years.

Since starting a conservation program with the Fleming County Soil Conservation District, this veteran farmer's tobacco yields have increased 400 to 500 pounds per acre. Last year Hillis averaged 2,135 pounds per acre on his 4.3 acre base. His tobacco is terraced, planted on the contour, has sod waterways, and uses a good cover crop each year.